

CLAIMS

What is claimed as new and desired to be protected by Letters Patent of the United States is:

1. A power supply system for supplying power to a CPU, said power supply system comprising:
  - a power supply circuit for supplying the CPU with a prescribed supply voltage;
  - a voltage detecting circuit for outputting a reset signal for resetting the CPU when the supply voltage is at or below a prescribed voltage detection value;
  - a control circuit for decreasing the supply voltage to a prescribed power save voltage level when a power saving mode is set, wherein said control circuit decreases the supply voltage to be the prescribed power save voltage level after decreasing the prescribed voltage detection value to be less than or equal to the power save voltage level when the power saving mode is set, and wherein said control circuit recovers the prescribed voltage detection value after recovering the supply voltage when the power saving mode is terminated.

2. The power supply system according to claim 1, wherein said power supplying circuit switches the power supply voltage from a first power level to a second power level using a first switching signal, said second power level being lower than said first power level,

changing the first switching signal from a first to second condition, and said voltage detecting section changing the reset level from a first reset level to a second reset level by using a second switching signal, said second reset level being lower than said first reset level; and

changing the second switching signal from a first to second condition; wherein said control section changes the second switching signal from the first to second condition after changing the first switching signal from the first to second condition when the power saving mode is set,

wherein said control section returns the second switching signal to the second condition after returning the first switching signal to the first condition when the power saving mode is terminated.

3. The power supply system according to claim 2, wherein said power supply circuit includes:

a transistor configured to pass an output voltage of a battery power source in accordance with a control voltage applying thereto;

an amplifier configured to output the control voltage, said control voltage being determined from a difference between a prescribed rate portion of the output voltage and a prescribed reference voltage, said prescribed rate portion being input to the amplifier;

a voltage decreasing device for changing the prescribed rate portion and for decreasing the output voltage in response to an input of the first switching signal in the second condition;

wherein said voltage detecting section includes:

a comparator configured to output a reset signal for resetting the CPU when a second prescribed rate portion of the output voltage of the power supplying section is less than or equal to a prescribed reference value; and

a voltage detection value changing device for changing the second prescribed rate portion in response to an input of the

second switching signal in the second condition transmitted from the control circuit;

wherein said control section outputs the second switching signal in the second condition to the power supplying circuit after outputting the first switching signal in the second condition to the voltage detecting circuit when the CPU sets the power saving mode; and said control circuit outputs the first switching signal in the first condition to the voltage detecting circuit after outputting the second switching signal in the first condition to the power supply circuit when the CPU resets the power saving mode,

4. A method for supplying power to a CPU providing a power saving mode, said method comprising the steps of:

providing a reset signal for resetting the CPU when an output voltage from a power supply is less than or equal to a prescribed operable level;

setting a power saving mode;

decreasing the prescribed operable level before decreasing the output voltage down to a power saving level;

resetting the power saving mode; and

recovering the prescribed operable level after recovering  
the output voltage.